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KNOBBE MARTENS OLSON & BEAR LLP  
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EXAMINER
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NGUYEN, XUAN LAN T

ART UNIT	PAPER NUMBER
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3657

NOTIFICATION DATE	DELIVERY MODE
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03/09/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/553,579	DUPUIS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lan Nguyen	3657	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 February 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-16 and 21-31 is/are pending in the application.
- 4a) Of the above claim(s) 14-16 and 21-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Oath/Declaration***

1. The Oath as submitted on 2/8/11 is approved.

### ***Election/Restrictions***

2. Applicants amended claim 1 to include a joint assembly and how the brake interacts with the joint assembly. The structures of the joint assembly and how it interacts with the SMA brake are particular to the combination of a prosthesis as recited in the non-elected claim 14. Originally, Applicants had elected the invention of the brake to be examined. It is reminded that claims 1-3 and 5-13 need to be free from the limitations of a combination, as originally elected. Therefore, the joint assembly and how it interacts with the SMA brake as amended are not further treated. Note that this is the third time, this objection has been presented to Applicants.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels (6,045,076) in view of Chu (5,831,417).

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Re: claim 1, Daniels shows a friction brake assembly, in figure 26(b), to act between a main actuator, a reel, and a linear shaft 353 relatively moveable with respect to said main actuator, as in the present invention, comprising: a brake member 346 connected to said linear shaft, a carrier 348 connected to said main actuator; a friction pad (not shown but inherent in a brake shoe) attached to said carrier for engagement with said brake member; a first actuator 344 including at least one shape memory alloy element, said first actuator being operable upon said carrier to move said friction pad into engagement with said brake member, wherein the engagement of said friction pad with said brake member inhibits longitudinal displacement of said linear shaft 353; and a second actuator 357 being operable upon said carrier to move said friction pad away from said brake member, wherein the moving away of said friction pad from said brake member allows longitudinal displacement of said linear shaft and a control circuit 50 to operate selectively said first actuator. Daniels shows a spring as a second actuator while the claim requires an SMA as a second actuator. Chu is relied upon to teach the concept of having two SMA actuators in figure 5. As shown, the reel mechanism 335 is actuated by two SMA actuators 305A and 305B wherein actuator 305A engages the drag while actuator 305B releases the drag of the reel mechanism. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Daniel's brake to employ an SMA actuator as a second actuator in the brake of Daniel instead of a spring, in order to maintain an engage state or a release state of the brake without constant supply of current to each SMA as taught by Chu. Note that as modified by Chu, the two SMA actuators would only change in length when the electric

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current is applied thereto but would remain unchanged upon removal of the current, as claimed. Applicants amended claim 1 to recite that the linear shaft is configured to displace longitudinally with respect to the main actuator.

- MPEP 2114 is cited below to show that functional language in an apparatus claim does not differentiate the apparatus from the prior art. Daniels' brake comprises a shaft 353, the same as shaft 26 of the instant invention. The structures of Daniels' brake as modified by Chu are the same as the claimed brake in claim 1. The difference is only in the functions of the shaft. Daniels' shaft rotates while the claimed shaft translates. Both longitudinal movement and rotational movement of the shaft would be retarded by the brake.

### ***2114 Apparatus and Article Claims - Functional Language [R-1]***

*For a discussion of case law which provides guidance in interpreting the functional portion of means-plus-function limitations see MPEP § 2181 - § 2186.*

### **APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART**

*>While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. >In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); < In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).*

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**MANNER OF OPERATING THE DEVICE DOES NOT DIFFERENTIATE APPARATUS CLAIM FROM THE PRIOR ART**

*A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (The preamble of claim 1 recited that the apparatus was "for mixing flowing developer material" and the body of the claim recited "means for mixing ..., said mixing means being stationary and completely submerged in the developer material". The claim was rejected over a reference which taught all the structural limitations of the claim for the intended use of mixing flowing developer. However, the mixer was only partially submerged in the developer material. The Board held that the amount of submersion is immaterial to the structure of the mixer and thus the claim was properly rejected.).*

**A PRIOR ART DEVICE CAN PERFORM ALL THE FUNCTIONS OF THE APPARATUS CLAIM AND STILL NOT ANTICIPATE THE CLAIM**

*Even if the prior art device performs all the functions recited in the claim, the prior art cannot anticipate the claim if there is any structural difference. It should be noted, however, that means plus function limitations are met by structures which are equivalent to the corresponding structures recited in the specification. In re Ruskin, 347 F.2d 843, 146 USPQ 211 (CCPA 1965) as implicitly modified by In re Donaldson, 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994). See also In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1951 (Fed. Cir. 1999) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently.).*

- Furthermore, MPEP 2143(F)(1)(3) is cited to show that the brake of Daniels as modified by Chu would work in various uses to produce the predictable result to retarding the motion of the shaft whether it is a rotational motion or a longitudinal motion, as is well known in the brake art.

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**2143 >Examples of< Basic Requirements of a Prima Facie Case of Obviousness**

*\*\*>The Supreme Court in KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_, \_\_\_, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in Graham. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit.*

**EXEMPLARY RATIONALES**

*Exemplary rationales that may support a conclusion of obviousness include:*

- (A) Combining prior art elements according to known methods to yield predictable results;*
- (B) Simple substitution of one known element for another to obtain predictable results;*
- (C) Use of known technique to improve similar devices (methods, or products) in the same way;*
- (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;*
- (E) "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;*
- (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;*
- (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.*

*Note that the list of rationales provided is not intended to be an all-inclusive list. Other rationales to support a conclusion of obviousness may be relied upon by Office personnel.*

*The subsections below include discussions of each rationale along with examples illustrating how the cited rationales may be used to support a finding of obviousness. The cases cited (from which the facts were derived) may not necessarily stand for the proposition that the particular rationale is the basis for the court's holding of obviousness. Note that, in some instances, a single case is used in different subsections to illustrate the use of more than one rationale to support a finding of*

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*obviousness. It will often be the case that, once the Graham inquiries have been satisfactorily resolved, a conclusion of obviousness may be supported by more than one line of reasoning.*

**F. Known Work in One Field of Endeavor May Prompt Variations of It for Use in Either the Same Field or a Different One Based on Design Incentives or Other Market Forces if the Variations Are Predictable to One of Ordinary Skill in the Art**

*To reject a claim based on this rationale, Office personnel must resolve the Graham factual inquiries. Then, Office personnel must articulate the following:*

*(1) a finding that the scope and content of the prior art, whether in the same field of endeavor as that of the applicant's invention or a different field of endeavor, included a similar or analogous device (method, or product);*

*(2) a finding that there were design incentives or market forces which would have prompted adaptation of the known device (method, or product);*

*(3) a finding that the differences between the claimed invention and the prior art were encompassed in known variations or in a principle known in the prior art;*

*(4) a finding that one of ordinary skill in the art, in view of the identified design incentives or other market forces, could have implemented the claimed variation of the prior art, and the claimed variation would have been predictable to one of ordinary skill in the art; and*

*(5) whatever additional findings based on the Graham factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.*

*The rationale to support a conclusion that the claimed invention would have been obvious is that design incentives or other market forces could have prompted one of ordinary skill in the art to vary the prior art in a predictable manner to result in the claimed invention. If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art.*

Re: claims 2, 3, 8 and 9, figure 26(b) of Daniels shows a horizontal beam as a connection for the SMA actuator 344 and spring actuator 357 as in Applicants'. As



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modified by Chu, the horizontal beam of Daniels would be a connection for both SMA actuators.

Re: claims 5, 6 and 10-12, Daniels show said shape memory alloy elements 344 are tensile elements and said control circuit 50 changes the length of said elements to actuate said brake.

Re: claim 7, Daniels shows the brake member as a drum 346 rotatably mounted on said main actuator and said carrier 348 is pivotally secured to said actuator 344 and said would be second actuator as modified by Chu for movement into or out of engagement with said drum.

Re: claim 13, Daniels shows said carrier 348 is pivotally mounted for movement about an axis, axis of shaft 353, parallel to but spaced from the axis of rotation of said drum 346.

### ***Response to Arguments***

5. Applicants' arguments filed 2/8/11 have been fully considered.
  - The argument with respect to the election/restriction objection is found to be non-persuasive. The objection is repeated above. Paragraph [0028] of Applicants shows that the prosthesis has a joint assembly, a brake and many other sub-devices to make up the prosthesis. Originally, Applicants had elected the sub-device of the brake to be examined. The joint assembly and other sub-devices are deemed to belong to the combination of the prosthesis which was the non-elected invention as stated in claim 14 as originally presented. Furthermore,

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figures 2-5 are illustrations of Applicant's brake. None of figures 2-5 shows the joint assembly. It is believed that Applicants, as originally filed, do not intend the joint assembly to be part of the brake. Applicants are advised to amend the claims to include only the features of the brake as originally presented and elected. Please note that this is the third time, this objection has been presented to Applicants.

- Applicants further argue that the SMAs of Chu does not remain the same when the current is not supplied to said SMAs. Applicants cite column 5, line 57 and SMA 305C to support the argument. Please note that SMA 305C is not the SMA being used in the rejection. SMAs 305A and 305B are the two SMAs being used in the rejection as stated above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Nguyen whose telephone number is (571) 272-7121. The examiner can normally be reached on Monday through Friday, 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xuan Lan Nguyen/  
Primary Examiner  
Art Unit 3657